

## How to Organize Your Teaching

### Teaching Strategies

Professional Development  
Module

Montana Office of Public  
Instruction




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### Group Norms

Listening: SLANT  
Cell phone reminder  
Conversations  
Breaks



Bathroom location




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### Doing What Works Website

Practice  
Learn  
See  
Do




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## Introduction Activity

- Think about an adjective that describes you that begins with the same letter your first name begins with and an animal with the same letter as well.
- Share with the group one at a time around the room.

- “Groovy Gloria Groundhog”




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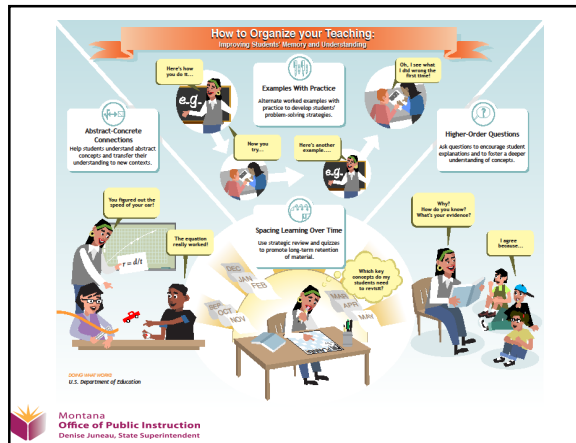
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## TOPIC SUMMARY

### Multimedia Overview: How to Organize Your Teaching




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## Key Concepts in Organizing Instruction and Study

1. Spacing learning over time with review and quizzing
2. Alternate worked examples with problem-solving practices
3. Connect abstract and concrete representations of concepts
4. Use higher-order questions to help students build explanations




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## •Expert Interview “Key Concepts in Organizing Instruction and Study”

Hal Pashler, Ph.D. 

University of California, San Diego




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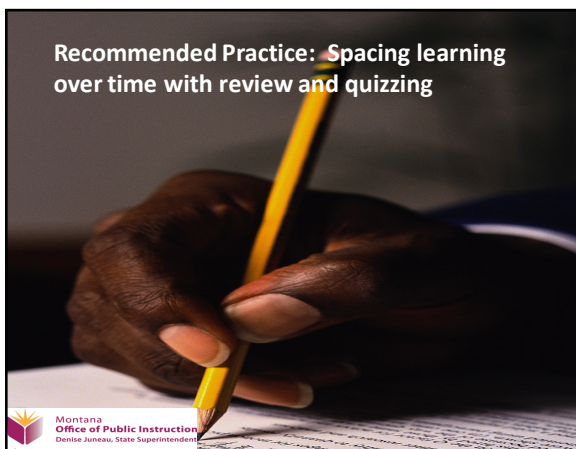
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## Recommended Practice: Spacing learning over time with review and quizzing




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## Spacing Learning Over Time Practice Summary



- Introducing the key subject content
- Revisiting that content with short quizzes or targeted homework assignments
- Quizzes or review activities asking students to recall key facts several weeks or months after the original lesson.

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## Spacing Learning Over Time Practice Summary

- Multimedia Overview  
Spacing Learning Over Time with  
Review and Quizzing




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## Spacing Learning Over Time Learn What Works

### LEARN:

- Expert Interview "Key Concepts in Spacing Learning Over Time"
- Mark McDaniel, Ph.D.  
Washington Univ., St. Louis




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## Spacing Learning Over Time Learn What Works- Key Concept

1. Use quizzes and fun games for retrieval practice to reduce forgetting.




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## Spacing Learning Over Time Learn What Works- Key Concept

2. Teach students how to test and assess their own knowledge and focus their study strategies accordingly.




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## Spacing Learning Over Time Learn What Works- Key Concept

3. Use technology to provide quick-response quizzes.




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## Spacing Learning Over Time Learn What Works- Key Concept

4. Plan for important content to be revisited and reviewed over time.




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## Spacing Learning Over Time Learn What Works- Key Concept

5. Provide common planning time for teachers to revise grading systems that capture review and students' mastery of skills over time rather than a student's performance on a single assessment.




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## Spacing Learning Over Time Learn What Works

### LEARN:

- Expert Interview "Using Quizzes to Boost Achievement"
- Mark McDaniel, Ph.D.  
Washington Univ., St. Louis




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## Spacing Learning Over Time See How It Works



- Quick Quizzes as Learning Tools
- Charles Willems, Mike Comiskey,  
Matt Forbes
- Kettle Moraine High School, Wales(WI)




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## Spacing Learning Over Time See How It Works



- Quizzing With Clickers
- Columbia Middle School (IL)
- Patrice Bain – Middle School Social  
Studies




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## Spacing Learning Over Time See How It Works



- Bell Ringers, Pyramids, and Big Ideas
- Plainwell Middle School (MI)
- Bonny Bowen – social studies teacher




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## Spacing Learning Over Time Do What Works

- Learning Together About Spacing Learning Over Time
- Description- A Tool that can be used to convene a school in-service session for teachers to learn why and how to space learning over time.




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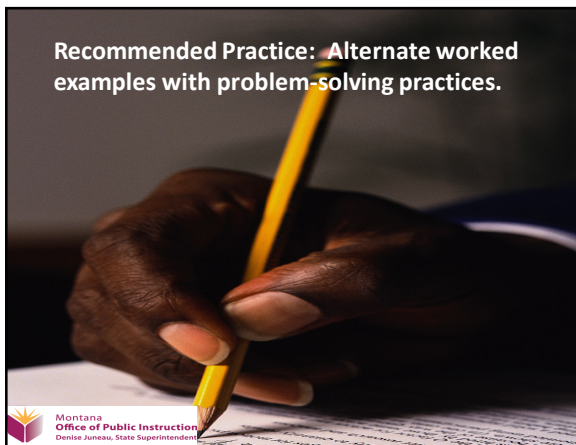
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**Recommended Practice: Alternate worked examples with problem-solving practices.**




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## Alternate Worked Examples with problem-solving practice Practice Summary

- By providing a worked example before each new problem to solve, students are given access to better problem-solving strategies and can develop their own strategies more effectively.




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## Alternate Worked Examples with problem-solving practice Practice Summary

- Multimedia Overview: Alternating Worked Examples With Practice




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## Alternate Worked Examples with Problem-Solving Practice Learn What Works

### LEARN:

- Expert Interview “Key Concepts in Alternating Worked Examples With Practice”
- Ken Koedinger, Ph.D.  
Carnegie Mellon University




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## Alternate Worked Examples with problem-solving practice Learn What Works- Key Concept

1. Develop homework sets that ask students to alternate between reading already worked solutions and solving problems on their own.

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Alternate Worked Examples  
with problem-solving practice

Learn What Works-

Key Concept

2. Have teachers conduct "thinkalouds" in which they explain their thinking process as they complete problems.




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Alternate Worked Examples  
with problem-solving practice

Learn What Works-

Key Concept

3. Plan for professional development to identify the characteristics of a good example.




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Alternate Worked Examples  
with problem-solving practice

Learn What Works-

Key Concept

4. Consider incorporating online tutorials that assist students.




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## Alternate Worked Examples with problem-solving practice See How It Works



- Slideshow: The Power of Worked Examples
- Kettle Moraine High School (WI)
- Mike Comiskey – Geometry Teacher

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## Alternate Worked Examples with problem-solving practice See/Do How It Works

- Student Handout: Order of Operations Homework with Worked Examples
- Carnegie Mellon University
- Julie Booth and Ken Koedinger

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**Recommended Practice: Connect abstract  
and concrete representations of concepts.**




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## Connect Abstract & Concrete Representations of Concepts Practice Summary



- Students need to make connections between abstract and concrete

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## Connect Abstract & Concrete Representations of Concepts Practice Summary



- Multimedia Overview: Connecting Abstract and Concrete Representations of Concepts

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## Connect Abstract & Concrete Representations of Concepts Learn What Works

### LEARN:

- Expert Interview "Using Concrete Situations to Introduce Content"
- Brian A. Bottge, Ed.D.
- University of Kentucky




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## Connect Abstract & Concrete Representations of Concepts

### Learn What Works-

#### Key Concept

1. Identify the challenging concepts in your discipline and how you might demonstrate these concepts in concrete contexts




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## Connect Abstract & Concrete Representations of Concepts

### Learn What Works-

#### Key Concept

2. Use graphic representations with verbal descriptions that illustrate key processes and procedures.




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## Connect Abstract & Concrete Representations of Concepts

### Learn What Works-

#### Key Concept

3. Help students understand the benefits and limitations of concrete representations.




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## Connect Abstract & Concrete Representations of Concepts

### Learn What Works-

#### Key Concept

4. Provide teachers with professional development in creating lessons that situate challenging course material in real-world problem scenarios.




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## Connect Abstract & Concrete Representations of Concepts

### See How It Works



- Presentation: Cupcake Geology: Using Models to Explain Abstract Concepts
- Chamberlin Hill Intermediate School (OH)




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## Connect Abstract & Concrete Representations of Concepts

### See How It Works



- Slideshow: Designing Hovercrafts Anchoring Instruction in Real-Life Problems
- Lodi Middle School (WI)
- Lyle Hendrickson – Math teacher




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## Connect Abstract & Concrete Representations of Concepts See How It Works



- Interview and Classroom Video: Demonstrating Thermal Layering
- Starr Elementary School, Plainwell (MI)
- Tasia Stamos, Fifth Grade Teacher

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## Connect Abstract & Concrete Representations of Concepts See How It Works



- Video Interview: Making History Come Alive
- Plainwell Middle School
- Matt Moorman

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## Connect Abstract & Concrete Representations of Concepts Do What Works

- Learning Together About Connecting Abstract and Concrete Representations of Concepts

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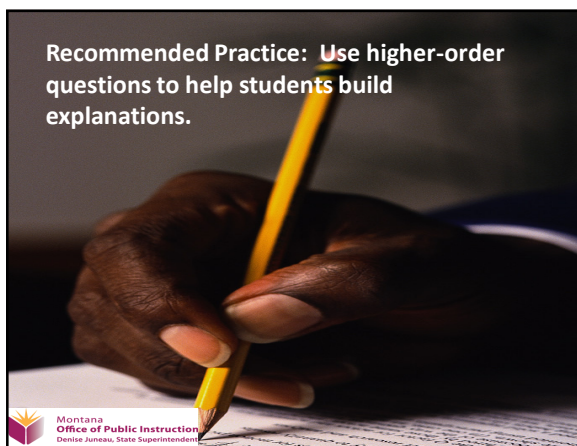
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Use Higher-order Questions to Help Students Build Explanations Practice Summary

- Who?
- What?
- Where?
- When?
- Why?



Montana Office of Public Instruction  
Denise Juneau, State Superintendent

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Use Higher-order Questions to Help Students Build Explanations Practice Summary

- Multimedia Overview: Using Higher-Order Questions to Help Students Build Explanations



Montana Office of Public Instruction  
Denise Juneau, State Superintendent

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## Use Higher-order Questions to Help Students Build Explanations

### Learn What Works

#### LEARN:

- Expert Interview “Key Concepts In Using Higher-Order Questions”
- Annemarie Palincsar, Ph.D.
- University of Michigan




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## Use Higher-order Questions to Help Students Build Explanations

### Learn What Works-

### Key Concept

1. Study your discipline to better understand how scientists, historians, mathematicians, and those who study literature ask questions and provide explanations.




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## Use Higher-order Questions to Help Students Build Explanations

### Learn What Works-

### Key Concept

2. Encourage students to dig deeper by asking them to explain their thinking in speaking and writing.




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Use Higher-order Questions to  
Help Students Build  
Explanations  
Learn What Works-  
Key Concept

3. Create a classroom culture that encourages students to take academic risks and share ideas with the class.




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Use Higher-order Questions to  
Help Students Build  
Explanations  
Learn What Works-  
Key Concept

4. Provide teachers with professional development about how to make question-asking and explanation-generating a natural part of the classroom environment.




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Use Higher-order Questions to  
Help Students Build  
Explanations  
See How It Works

- Video: Opportunities for Student Explanations
- Normal Park Museum Magnet Elementary Chattanooga (TN)
- Jill Levine




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## Use Higher-order Questions to Help Students Build Explanations

### See How It Works

- Video: Essential Questions: A Schoolwide Approach
- Normal Park Museum Magnet Elementary Chattanooga (TN)
- Jill Levine, Joyce Tatum




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## Use Higher-order Questions to Help Students Build Explanations

### See How It Works

- Video Interview: Response Groups. Eliciting Explanations in History
- Plainwell Middle School (MI)
- Matt Moorman, History teacher




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## Use Higher-order Questions to Help Students Build Explanations

### Do What Works

- Sentence Starters for Generating Higher-Order Questions
- Help generate deeper explanations using this worksheet for starting student sentences




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## Use Higher-order Questions to Help Students Build Explanations Do What Works

- Learning Together About Using Higher-Order Questions to Help Students Build Explanations
- The discussion questions in this tool can be used to convene a school in-service session for teachers to learn why and how to teach using higher-order questions




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## How to Organize Your Teaching Teaching Strategies

### Wrap Up




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## References/Resources

- Doing What Works: <http://dww.ed.gov/>




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